

FIGURE 2.
Photograph of
Smaller ROCHEM Cross-Flow Pilot UF Unit



FIGURE 3.
Photograph of
Larger ROCHEM Dead-End Pilot UF Unit

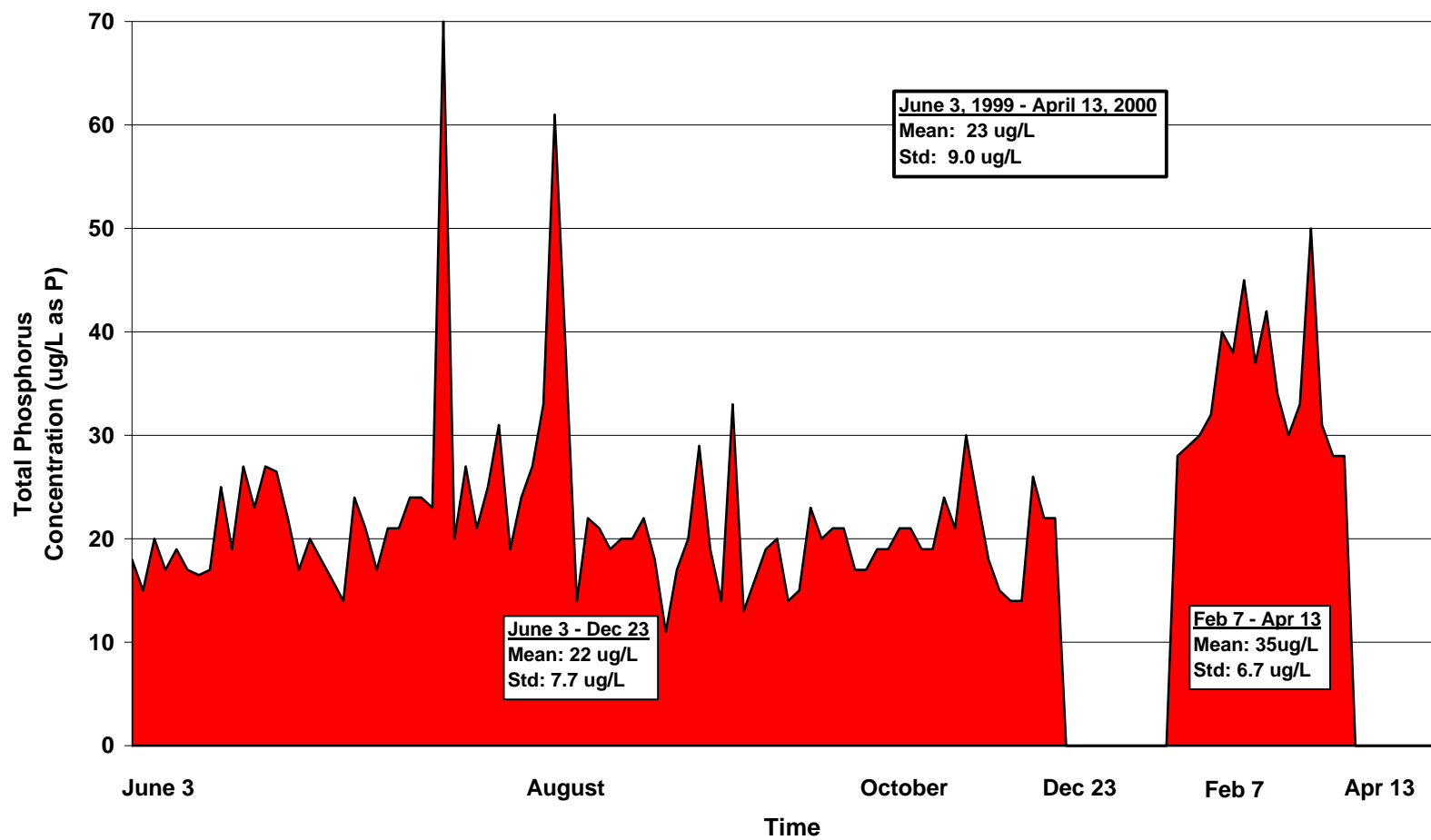


FIGURE 4.
Raw Water Total Phosphorus Concentration (Post-STA Site)
June 3, 1999 - April 13, 2000

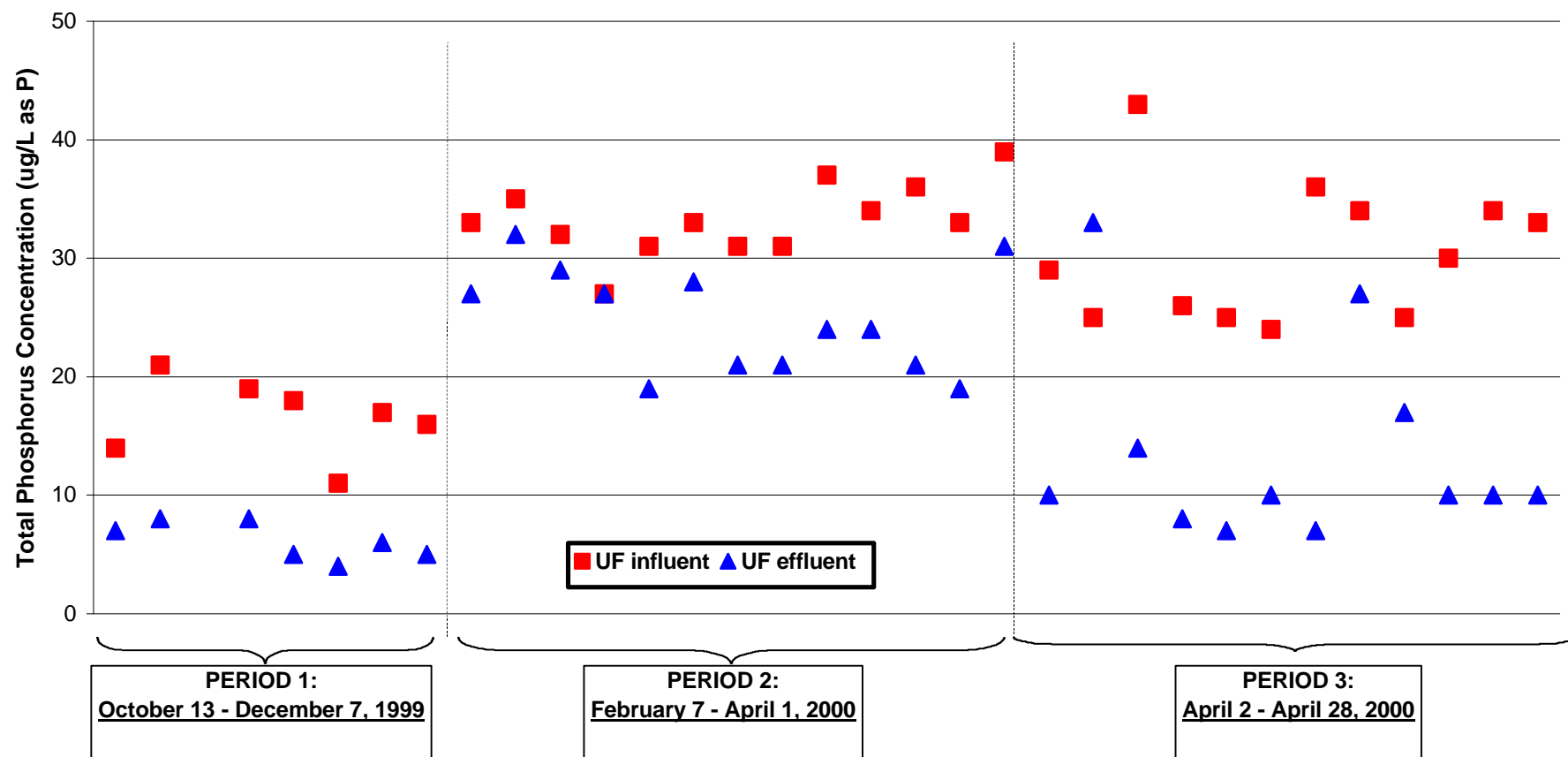


FIGURE 5.
Total Phosphorus Concentration Ultrafiltration (UF)
October 13, 1999 to April 28, 2000

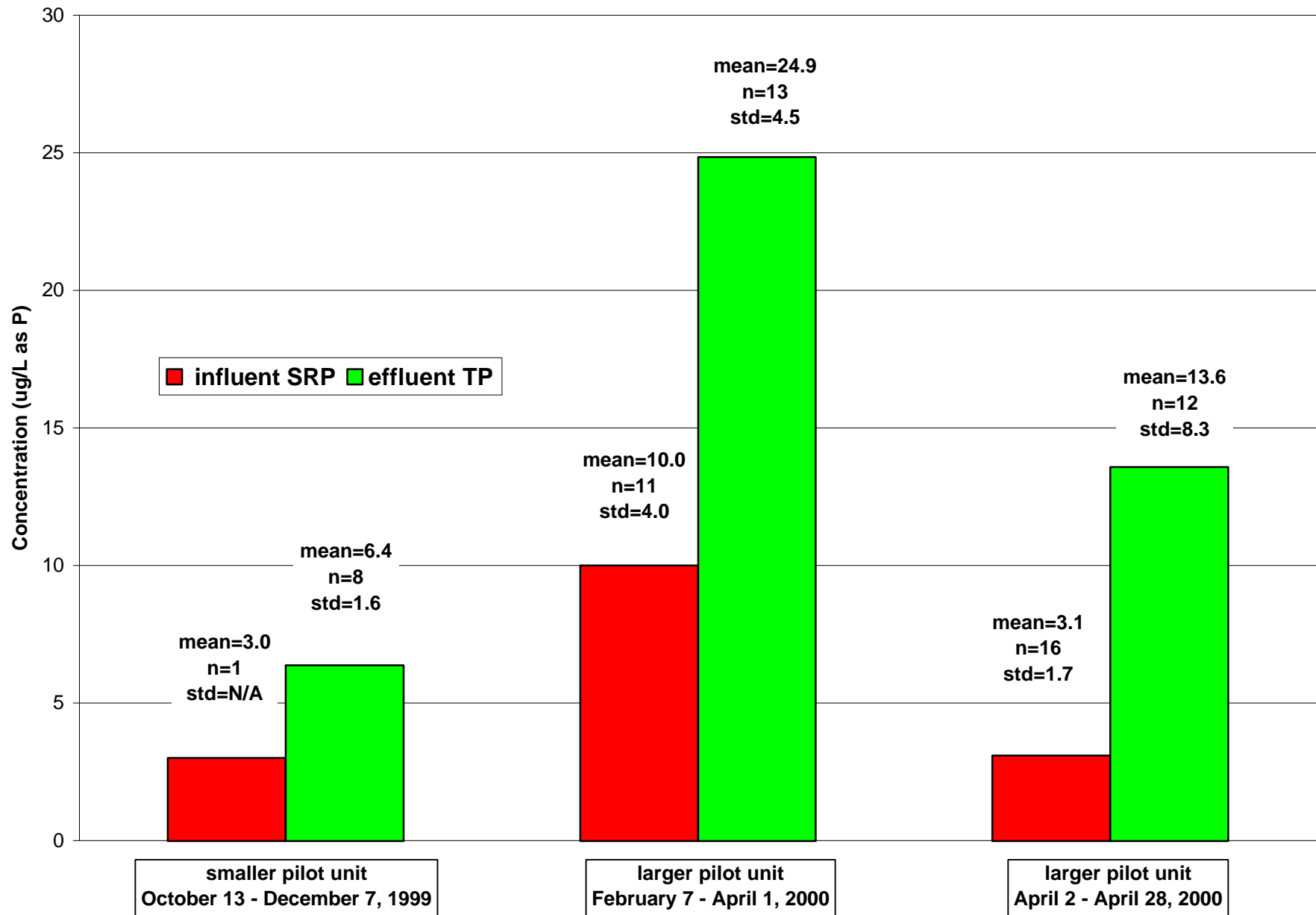


FIGURE 6
Influent Soluble Reactive Phosphorus (SRP) and Effluent Total Phosphorus (TP) Concentration During UF Testing
October 13, 1999 to April 28, 2000

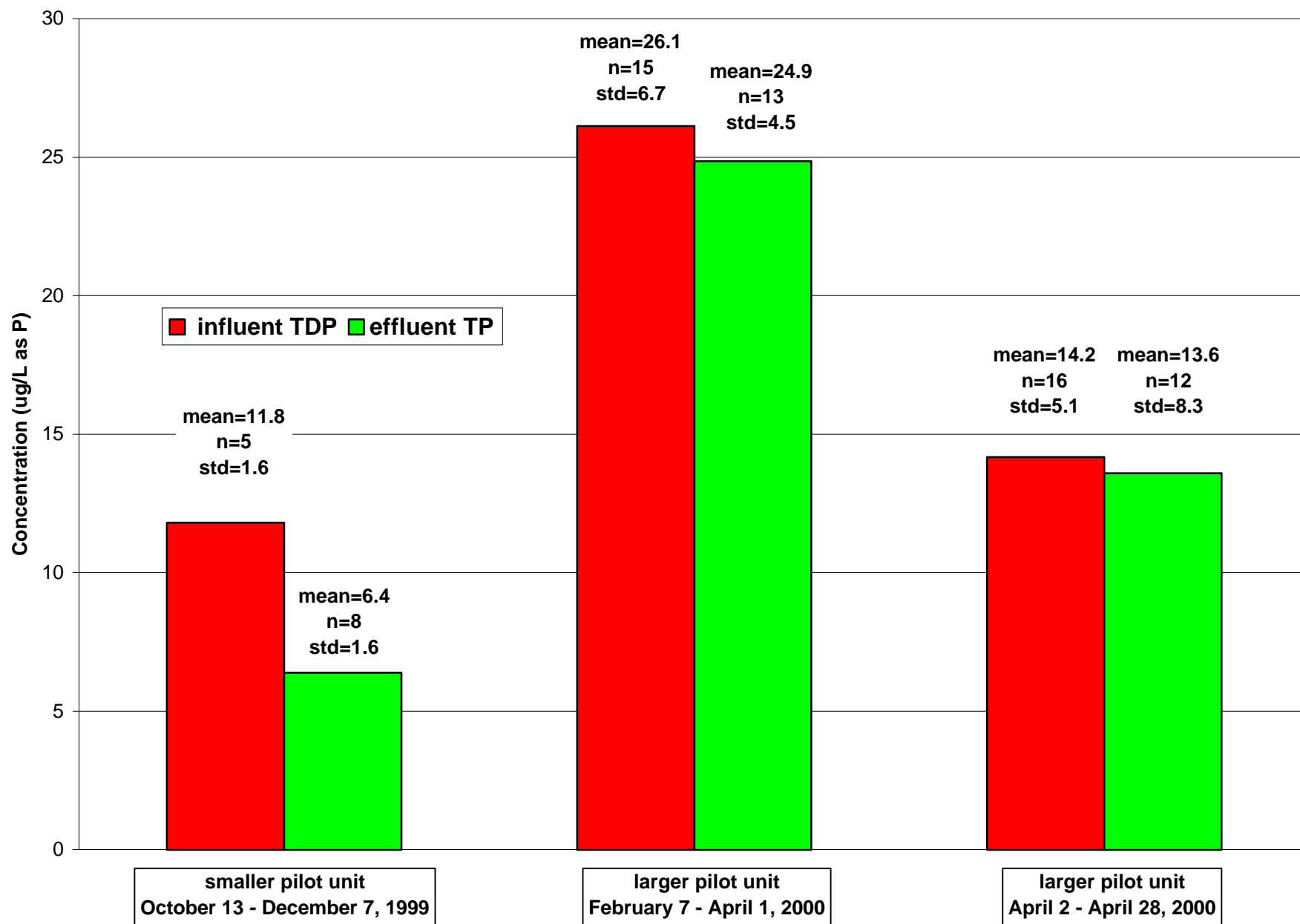


FIGURE 7
Influent Total Dissolved Phosphorus (TDP) and Effluent Total Phosphorus (TP) Concentrations During UF Testing
October 13, 1999 to April 28, 2000

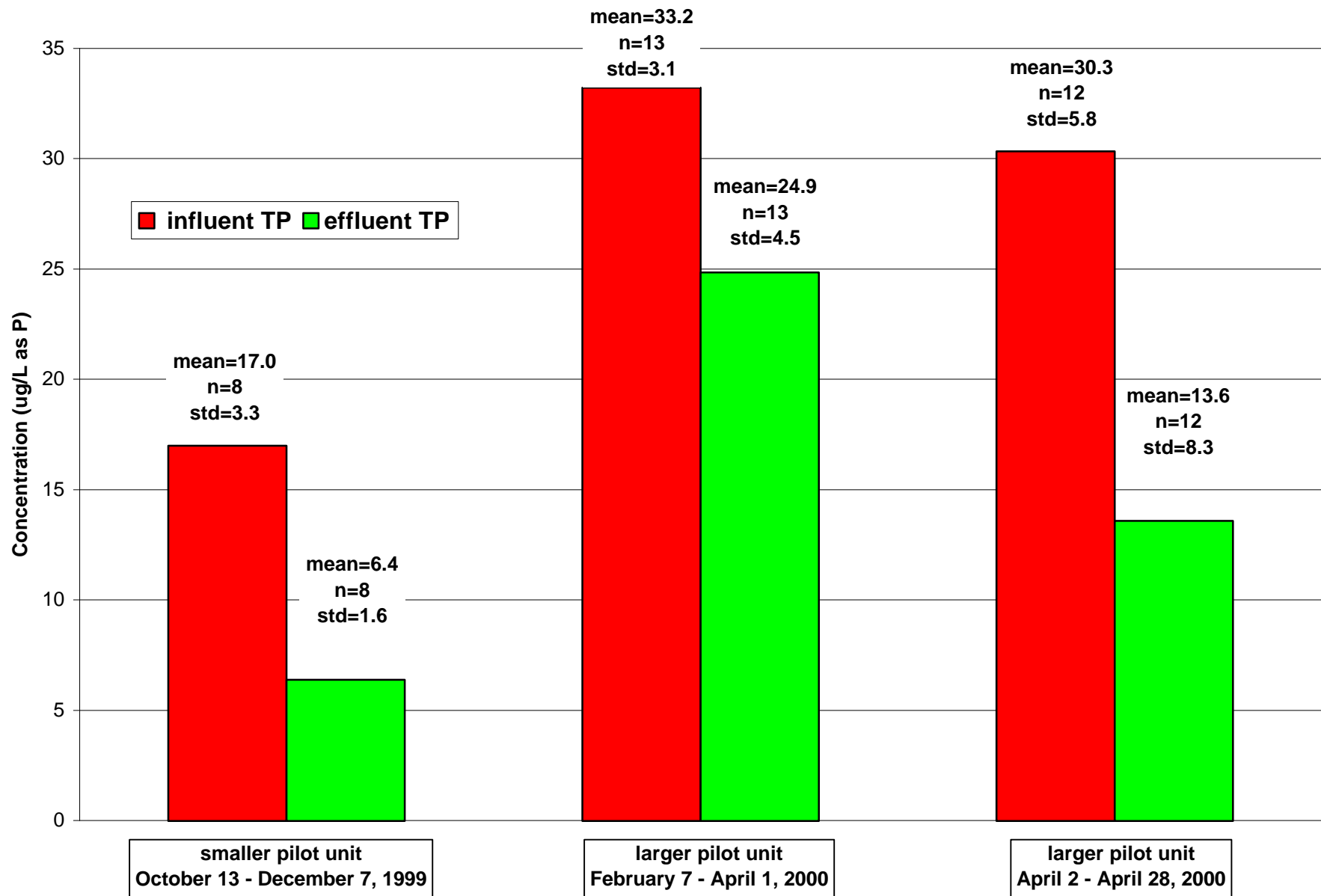


FIGURE 8
Influent and Effluent Total Phosphorus (TP) Concentrations During UF Testing
October 13, 1999 to April 28, 2000

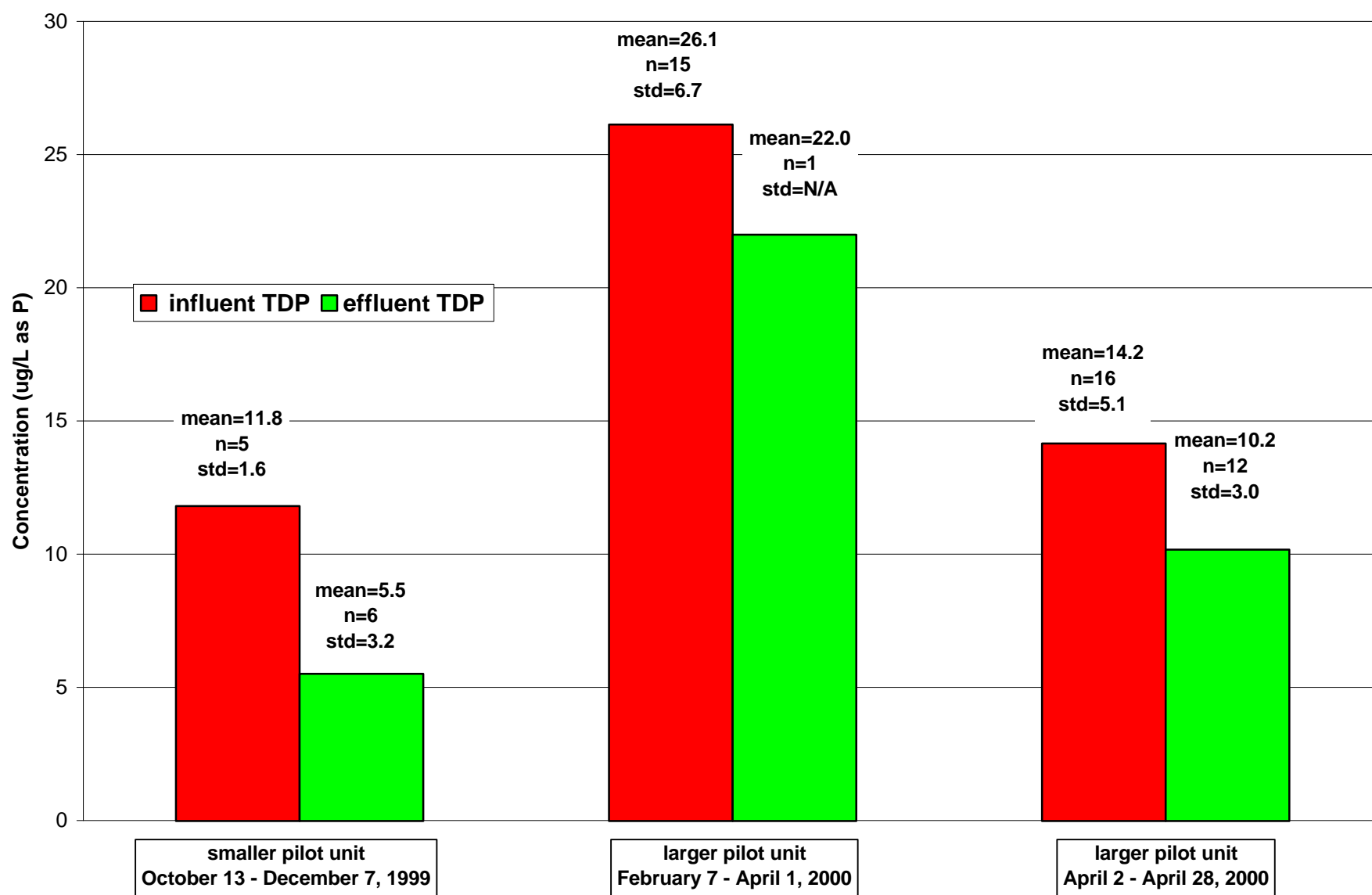


FIGURE 9.
Influent and Effluent Total Dissolved Phosphorus (TDP) Concentrations During UF Testing
October 13, 1999 to April 28, 2000

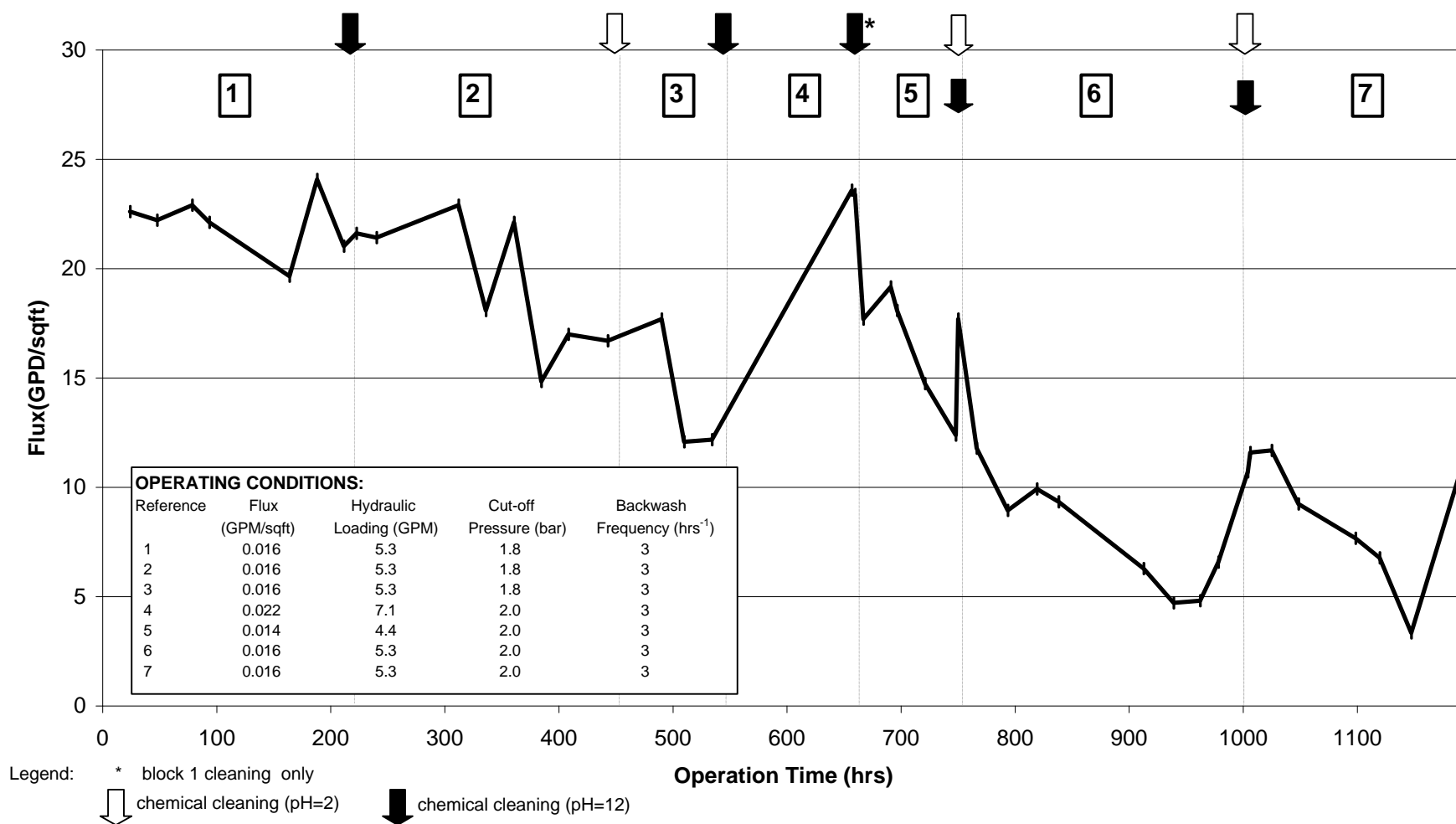


FIGURE 10.
Flux vs. Time for Ultrafiltration Pilot Unit
February 1, 2000 to April 28, 2000

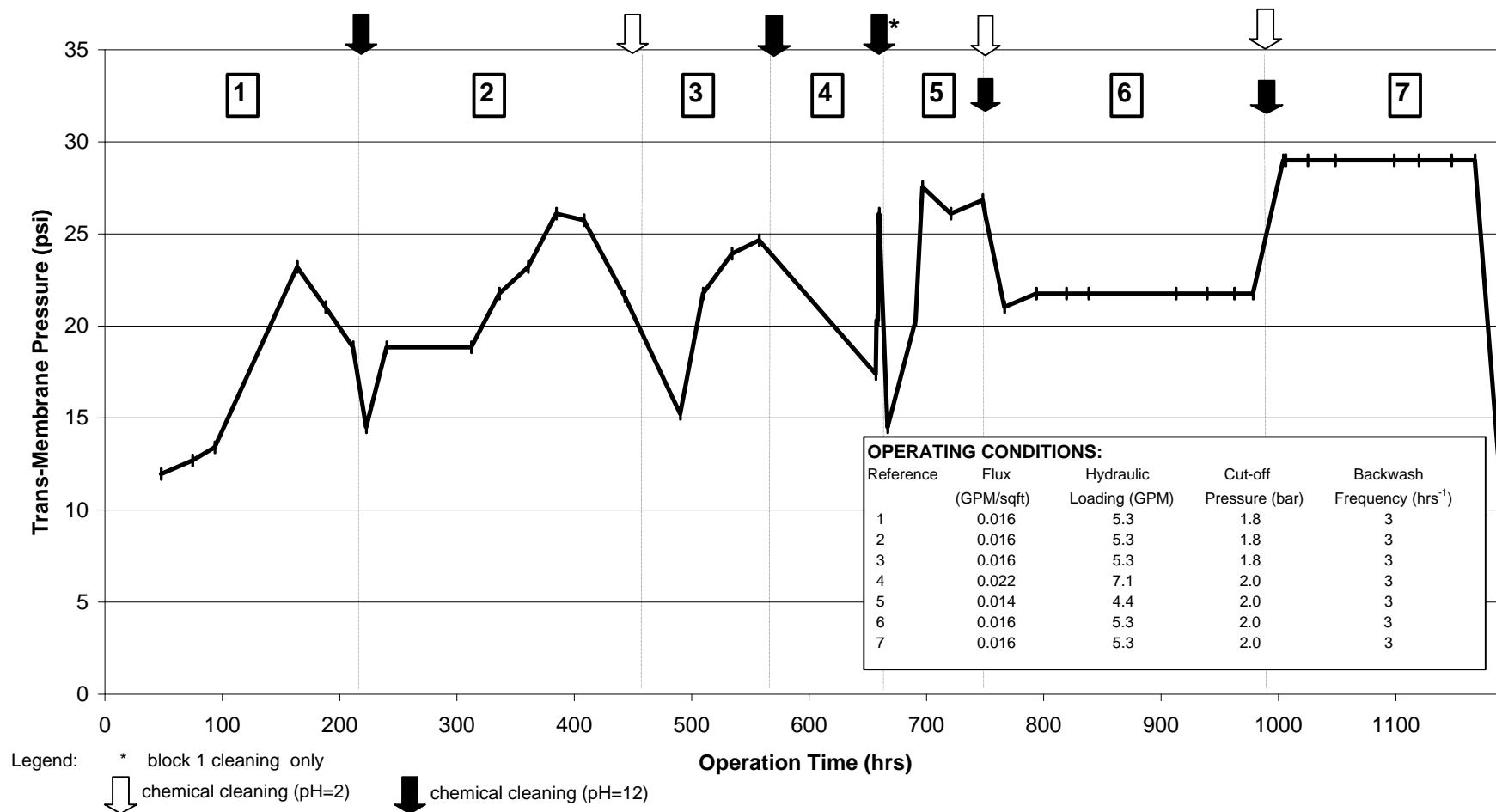
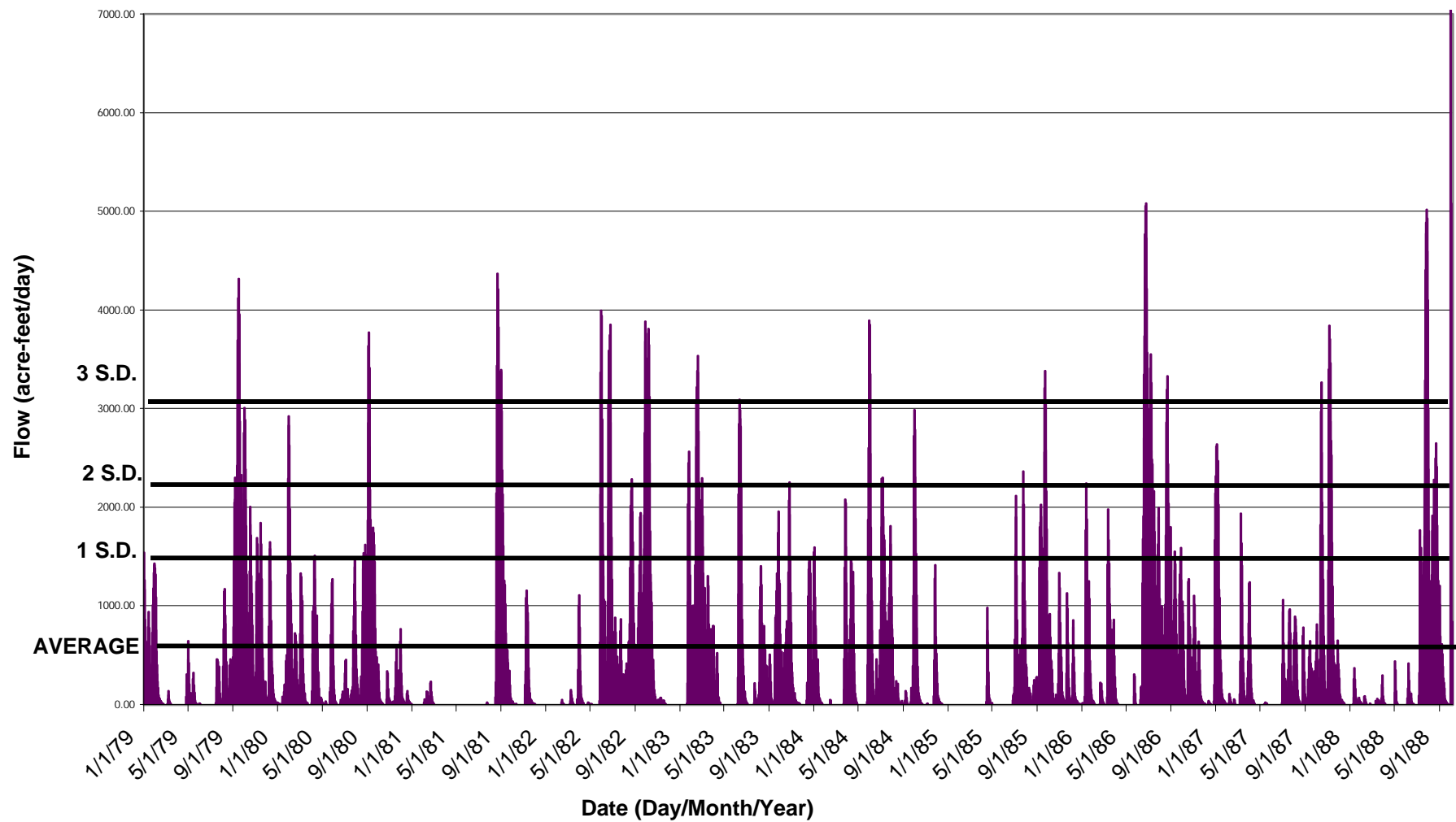
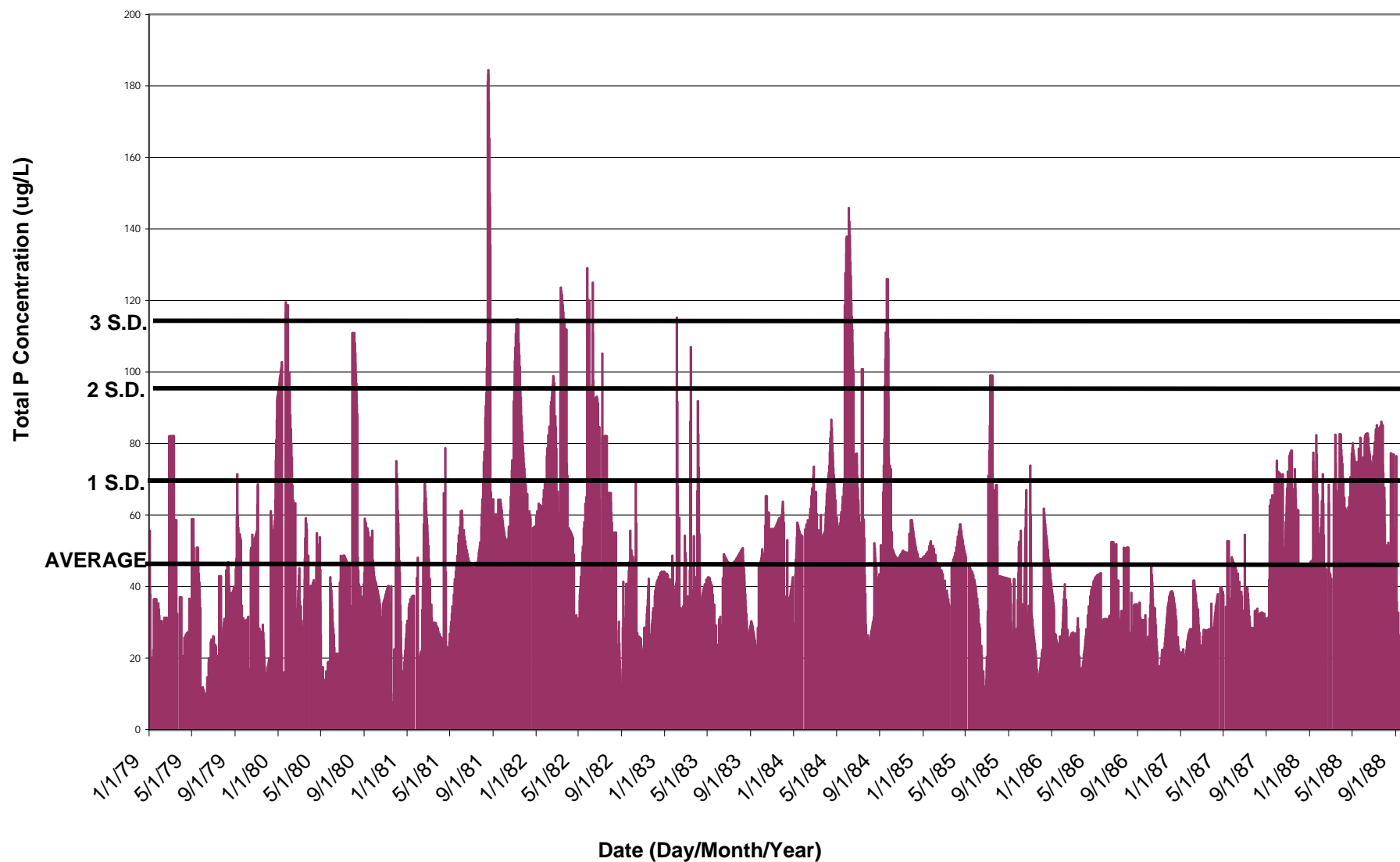


FIGURE 11.
Trans-Membrane Pressure vs. Time for Ultrafiltration Pilot Unit
February 1, 2000 to April 28, 2000



Average Flow = 537 acre-feet/day; S.D. = Standard deviation = 841 acre-feet/day; 1 S.D. = Average flow + 1 * S.D. = 1377 acre-feet/day;
 2 S.D. = Average flow + 2 * S.D. = 2218 acre-feet/day; 3 S.D. = Average flow + 3 * S.D. = 3059 acre-feet/day

FIGURE 12
ESTIMATED BASELINE STA2 EFFLUENT FLOW (POST-STA) DATA



Average Total P Concentration = 46 ug/L; **S.D.** = Standard deviation = 24 ug/L; **1 S.D.** = Average Total P concentration + 1 * S.D. = 70 ug/L;
2 S.D. = Average Total P concentration + 2 * S.D. = 93 ug/L; **3 S.D.** = Average Total P concentration + 3 * S.D. = 117 ug/L

FIGURE 13
ESTIMATED BASELINE STA2 (POST STA)
TOTAL PHOSPHORUS CONCENTRATION DATA

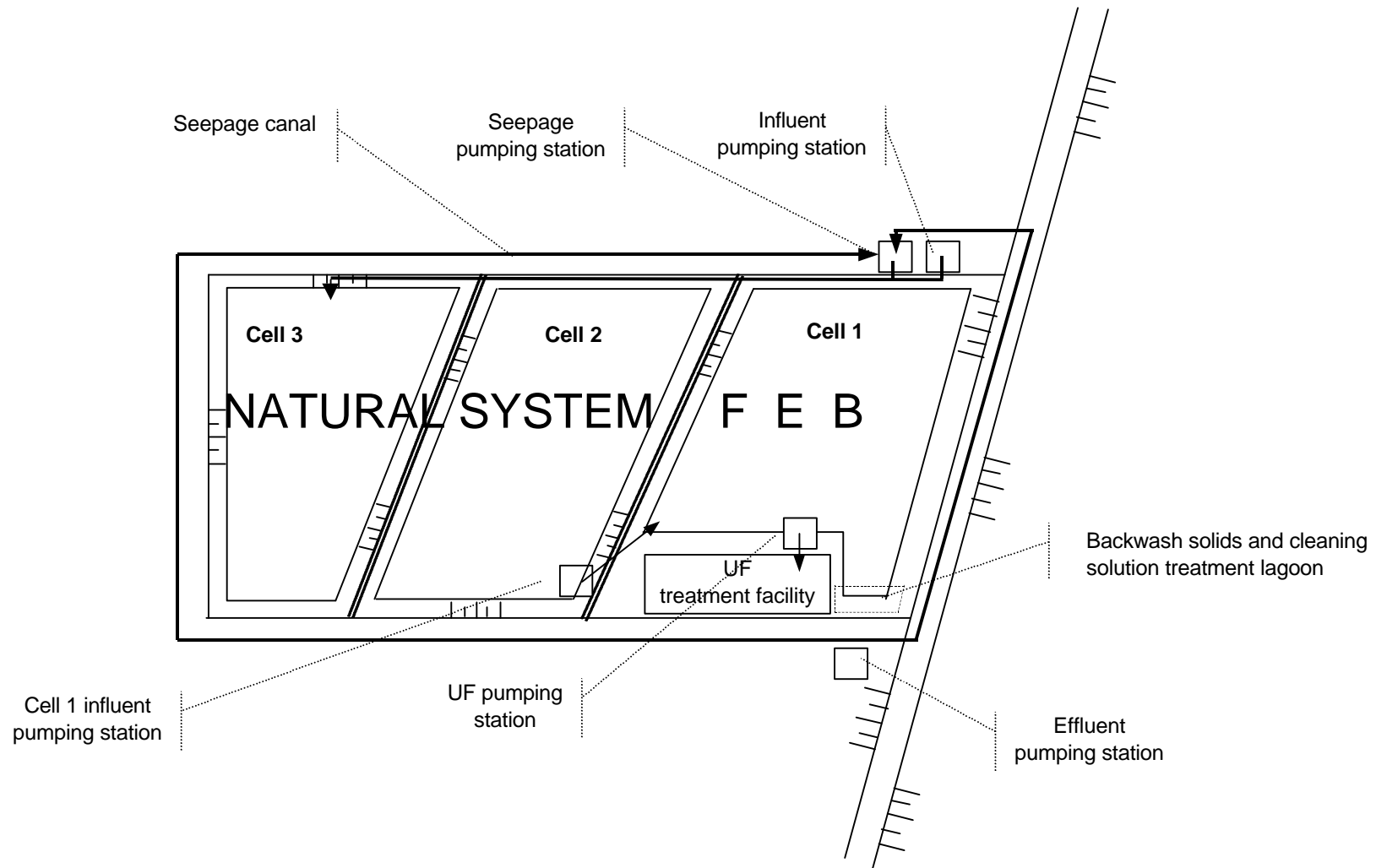


FIGURE 14.
CONCEPTUAL DESIGN SCHEMATIC

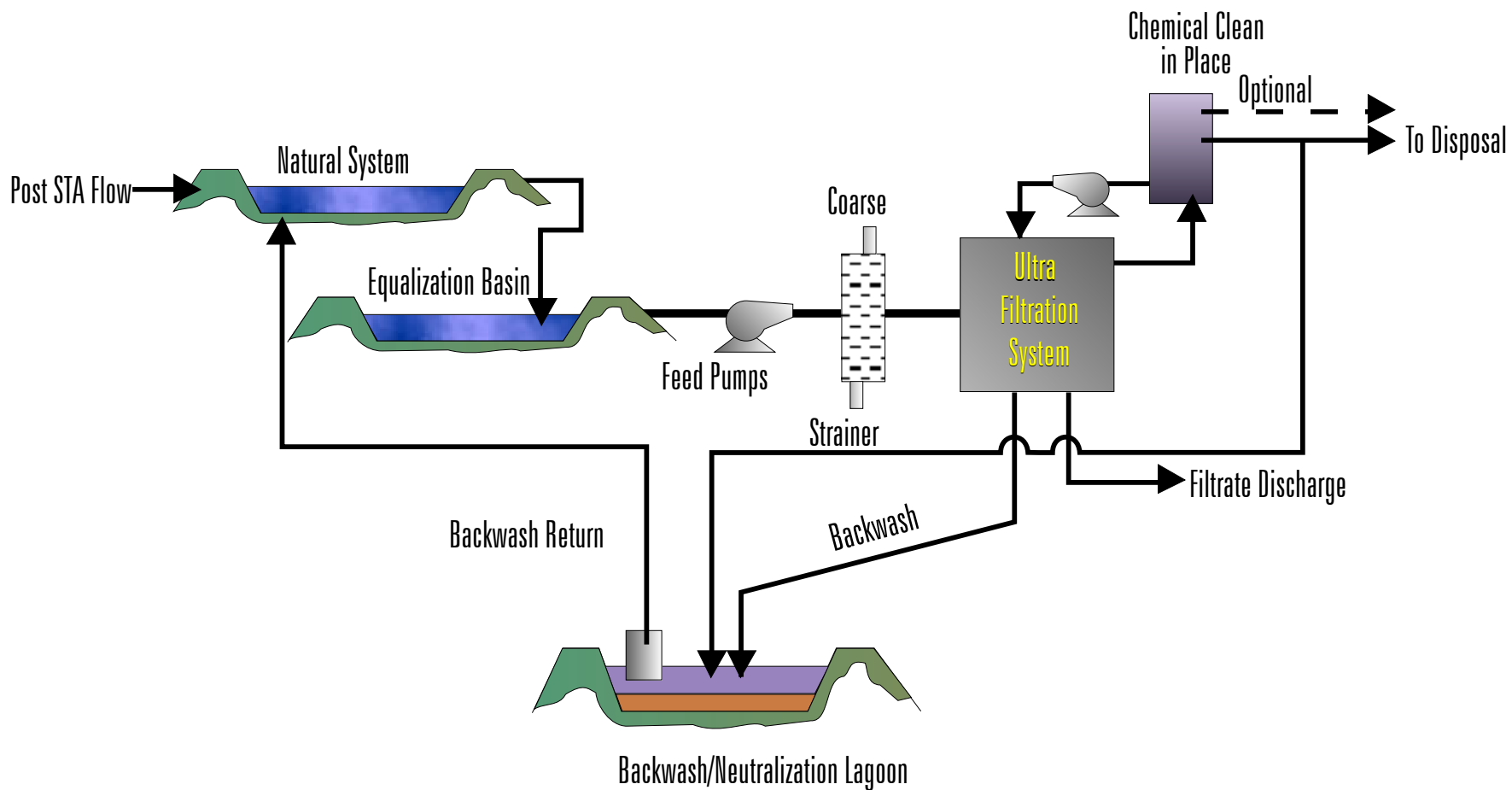


FIGURE 15
CONCEPTUAL FULL SCALE APPLICATION OF ULTRAFILTRATION
FOR PHOSPHORUS REMOVAL

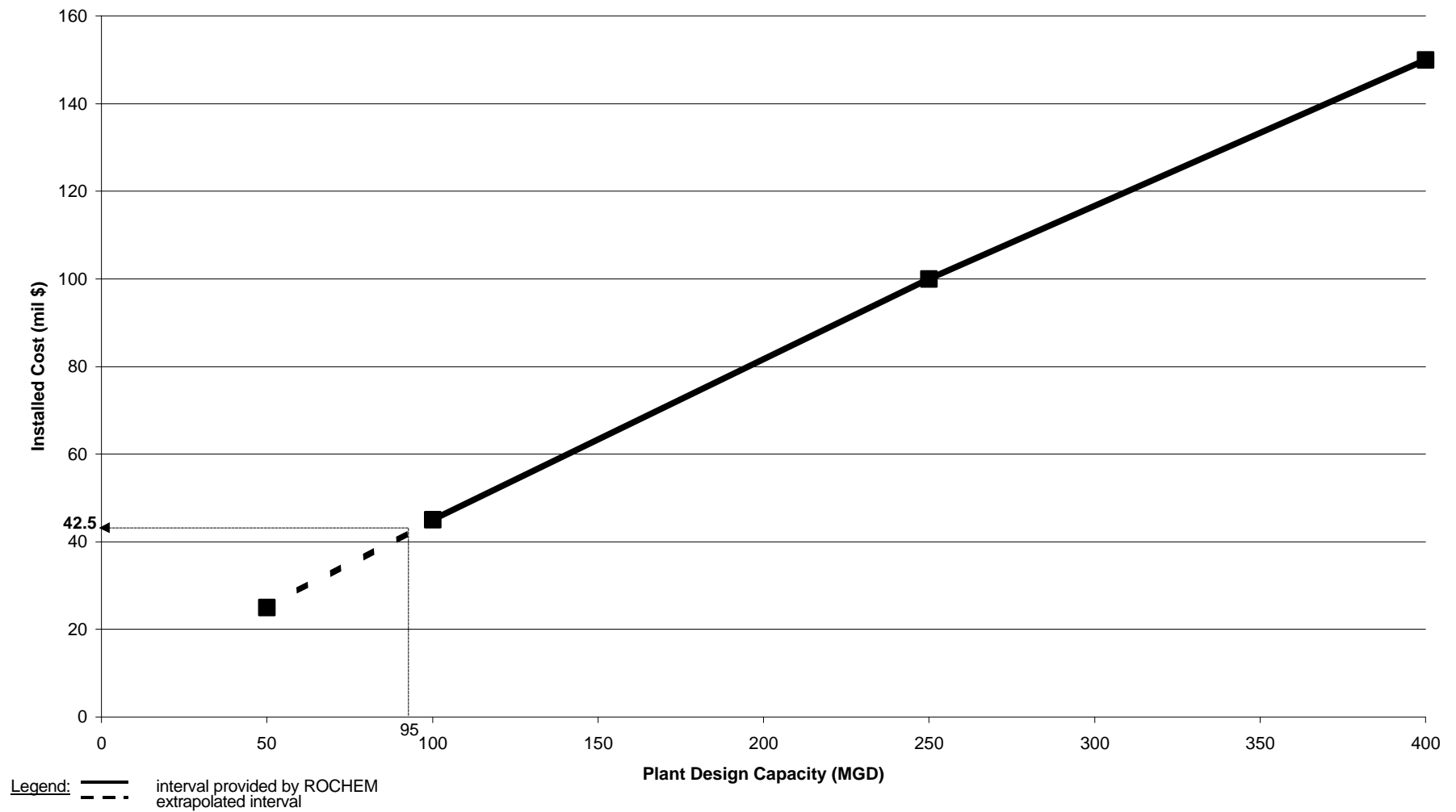
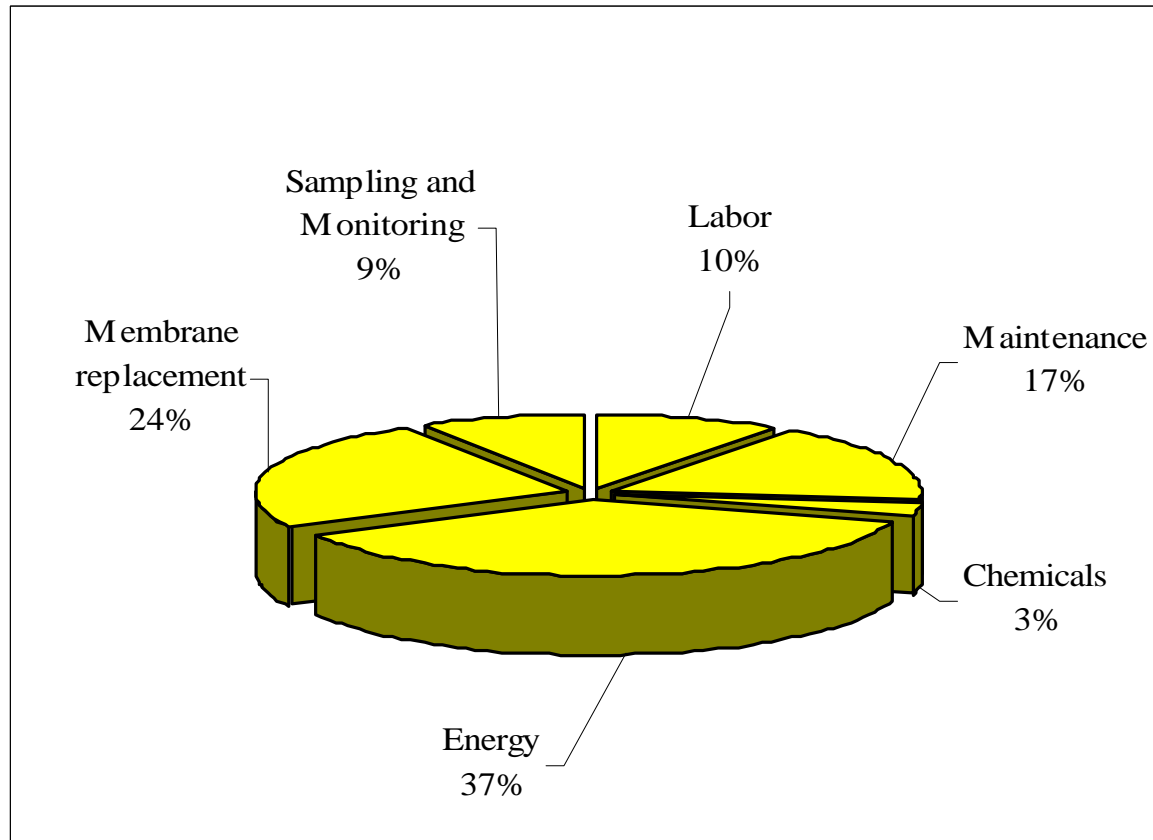


FIGURE 16.
Installed Capital Cost vs. Plant Design Capacity Full-Scale Ultrafiltration



NOTE:
20 ppb Total P blended effluent concentration and 20% diversion of 10-year POR flow volume.

FIGURE 17.
Total Annual Operating Costs
95 mgd Post-STA (\$5,838,817)